REMARKS

In response to the Office Action dated April 10, 2003, claims 1, 10, 16 and 25 are amended. Claims 1-28 are now active in this application. No new matter has been added.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 1-28 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner maintains that reciting a condition depending upon "if" in each of independent claims 1, 10, 16 and 25 renders the claims indefinite, as there is no recitation of what occurs when the condition depending upon "if" does not occur. Thus, the Examiner contends that it is unclear whether the limitations following the recitation of "if" are part of the claimed invention.

The rejections are respectfully traversed.

Claims 1 and 16, recite, *inter alia*:

a storage device for storing an approximate function having an angle of an illuminating direction with respect to a reference direction as a variable if the reference direction is a direction symmetrical with the specified direction with respect to a center axis of the main body in parallel to a normal to the opening, and having a plurality of undetermined coefficients including an angle of inclination of the center axis of the main body with respect to a normal to the surface of the object

What is being expressed in claims 1 and 16, and as supported by the present disclosure, is that the reference direction is not objectively determined, but is arbitrarily decided (by a person). Accordingly, simply replacing "if" with "when", as previously suggested by the Examiner in a telephone conference, does not convey the meaning that the reference direction is arbitrarily decided. Consequently, claims 1 and 16 are amended to recite "in a condition that a direction symmetrical with the specified direction with respect to a center axis of the main body in parallel

to a normal to the opening is defined as the reference direction ...", which is believed to convey the proper meaning and intent. Claims 10 and 25 are similar amended.

With regard to claims being rejected under 35 U.S.C. § 112, second paragraph, as being indefinite, case law precedent has established that an analysis under 35 U.S.C. § 112 begins with a determination of whether the claims do, in fact, set out and circumscribe a particular area with a reasonable degree of precision and particularity. Claim language *is viewed not in a vacuum, but in light of the teachings of the prior art and of the application disclosure* (emphasis added) as it would be interpreted by one possessing the ordinary level of skill in the art. *In re Johnson*, 558 F.2d 1008, 194 USPQ 187 (CCPA 1977); *In re Moore*, 439 F.2d 1232, 169 USPQ 236 (CCPA 1971).

A decision on whether a claim is invalid under this section of the statute requires a determination of whether those skilled in the art would understand what is claimed when the claim is read in light of the specification, *Seattle Box Co. v Industrial Crating & Packing*, 731 F.2d 381, 385, 221 USPQ 568, 574 (Fed. Cir. 1984).

In determining definiteness, no claim may be read apart from and independent from the disclosure on which it is based. *In re Cohn*, 169 USPQ 95, 98 (CCPA 1971); *In re Kroekel*, 183 USPQ 610, 612 (CCPA 1974):

> ... claims are not to be considered in a vacuum, "but always in light of the teachings of the prior art and the particular application disclosure as it would be viewed by one possessing the ordinary level of skill in the pertinent art." When considered in light of the prior art and the specification, claims otherwise indefinite may be found reasonably definite.

Frankly, the criticism of the claims is believed to be directed to breadth of scope and not indefiniteness. For example, the Examiner's assertion that "the limitation (if) does not set forth an alternative to the condition, thereby rendering the claim vague and indefinite" clearly suggests that reciting such alternative is required to make the claims definite. However, such alternative

is not required to make the claims definite, as it is believed clear that the language delineates that the reference direction is not objectively determined, but is arbitrarily decided (by a person).

At any rate, it is submitted that when the language of amended claims 1, 10, 16 and 25 is read in light of the specification, as is require, an artisan would readily understand the metes and bounds of the invention. In particular, an artisan would understand that the reference direction is not objectively determined, but is arbitrarily decided, and more specifically, that the stored approximate function

> has an angle of an illuminating direction with respect to a reference direction as a variable in a condition that a direction symmetrical with the specified direction with respect to a center axis of the main body in parallel to a normal to the opening is defined as the reference direction, and
> has a plurality of undetermined coefficients including an angle of inclination of the center axis of the main body with respect to a normal to the surface of the object...

It should be noted that the disclosure need not recite the claim language in *haec verba*. *In re Smith*, 481 F2.d 910, 178 USPQ 620 (CCPA 1973).

Thus, amended claims 1, 10, 16 and 25 are believed to recite the invention with the degree of precision and particularity required by the statute. Consequently, the withdrawal of the rejection of claims 1-9 and 16-24, as amended, under 35 U.S.C. § 112, second paragraph, as being indefinite, is respectfully solicited.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 102 AND § 103

I.   Claims 1-6, 9-12 and 15 are rejected under 35 U.S.C. § 102(b) as being anticipated by Steenhoek (USPN 4,917,495).

The rejections are respectfully traversed.

Independent claim 1 requires, *inter alia*:

a first calculator for calculating reflection characteristic measurement values of the measurement object in correspondence with the plurality of illuminators based on the light detection signals;

a storage device for storing an approximate function having ... and having a plurality of undetermined coefficients including an angle of inclination of the center axis of the main body with respect to a normal to the surface of the object; and

a second calculator for determining the plurality of undetermined coefficients based on the respective reflection characteristic measurement values and the angles of the illuminating directions, and correcting the respective reflection characteristic measurement values using the approximate function whose undetermined coefficients are determined.

While Steenhoek may have a calculator (column 8, line 64 to column 9, line 16), there is no disclosure in Steenhoek of a storage device storing an approximate function having a plurality of undetermined coefficients including an angle of inclination of the center axis of the main body with respect to a normal to the surface of the object, and then determining the plurality of undetermined coefficients based on the respective reflection characteristic measurement values and the angles of the illuminating directions, and *correcting the respective reflection characteristic measurement values using the approximate function whose undetermined coefficients are determined* (emphasis added).

Independent claim 10 requires, *inter alia*:

a calculator for *calculating a reflection characteristic of the object corresponding to the first illuminator* based on a sum of the light detection signals corresponding to the first and second illuminator. (Emphasis added).

Column 8, line 64 to column 9, line 16 of Steenhoek describes:

To measure a sample panel, the colorimeter is first secured on the panel by magnetic feet 34 and lamps 11a, 11b and 11c sequentially illuminate the sample surface at -30°, 0°, and 65° as measured from the sample normal. The light reflected from the panel is collected by lens 13 at 45° as measured from the sample normal, and is collimated to pass through entrance slit 15 to enter monochromator 19 (FIG. 1). Once in the monochromator, the collected light is detected by array detector 18 and ultimately converted to a voltage signal. The

measurements taken are processed by microcomputer 29 and displayed on LCD display 30. The detector response for each of the twelve elements 21 is first multiplied by the appropriate gain coefficient and then by the appropriate weighting coefficient for the particular tristimulus value being calculated. The sum of these products is then scaled to correct for the X_0, Y_0, Z_0 perfect white under the specific illumination conditions employed. These tristimulus values can then be converted into the desired co-ordinant system, for example, L* , a* , and b* or L, C, and h.

There is clearly nothing described regarding *calculating a reflection characteristic of the object corresponding to the first illuminator*, as is required by claim 10.

The above argued differences between the device recited in independent claims 1 and 16 and the device of Steenhoek undermine the factual determination that Steenhoek identically describes the claimed inventions within the meaning of 35 U.S.C. § 102. *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics Inc.,* 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Kloster Speedsteel AB v. Crucible Inc.,* 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986). Applicants, therefore, submit that the imposed rejection of claims 1-6, 9-12 and 15 under 35 U.S.C. § 102 for lack of novelty as evidenced by Steenhoek is not factually or legally viable and, hence, solicit withdrawal thereof.

II. Claims 16-21, 24, 25 and 28 are rejected under 35 U.S.C. § 102(b) as being anticipated by Nakazono (USPN 5,583,642).

As to independent claim 16, while the Examiner refers to column 4, lines 66 to column 5, line 24 of Nakazono, as disclosing the storage device and the first and second calculators, this portion does not describe a storage device storing an approximate function having a plurality of undetermined coefficients including an angle of inclination of the center axis of the main body with respect to a normal to the surface of the object, and then determining the plurality of

undetermined coefficients based on the respective reflection characteristic measurement values and the angles of the illuminating directions, and *correcting the respective reflection characteristic measurement values using the approximate function whose undetermined coefficients are determined* (emphasis added).

As to independent claim 25, the Examiner refers to column 5, lines 7 to 24 of Nakazono as disclosing calculating a reflection characteristic of the objection. However, this portion of Nakazono actually describes:

> Then, if a reference color tone close to the color tone of the sample coating S is not known ("NO" in a step S2), then color differences E_{15}, E_{45}, $E_{75(100)}$ between a plurality of reference color tones prepared in advance and the color tone of the sample coating S measured by the sensors 12, 14, 16 are calculated in a step S3. For example, the color difference E_{15} is determined according the equation:
> $$E_{15}((\ L^{*}_{15})^{2}+(\ a^{*}_{15})^{2}+(\ b^{*}_{15})^{2})^{1/2}$$
> where L^{*}_{15}, a^{*}_{15}, b^{*}_{15} represent the differences between the lightnesses and chromaticities of the reference color tone and the sample coating S.
> Similarly, the color differences E_{45}, $E_{75(100)}$ are determined according to similar equations. A color tone whose color difference E which is given as the sum of the color differences E_{45}, $E_{75(100)}$ is minimum is now determined as a reference color tone close to the color tone of the sample coating S in a step S4.

Clearly, there is clearly nothing described in this portion regarding *calculating a reflection characteristic of the object corresponding to the first illuminator*, as is required by claim 25.

The above argued differences between the device recited in independent claims 1 and 16 and the device of Nakazomo undermine the factual determination that Nakazomo identically describes the claimed inventions within the meaning of 35 U.S.C. § 102. *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics Inc.,* 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Kloster Speedsteel AB v. Crucible Inc.,* 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986). Applicants, therefore, submit that the imposed rejection of claims 16-21, 24, 25

and 28 under 35 U.S.C. § 102 for lack of novelty as evidenced by Nakazomo is not factually or legally viable and, hence, solicit withdrawal thereof.

III.   Claims 7, 8, 13 and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Steenhoek, as applied to claims 1 and 10, in view of Iida et al. (USPN 5,706,083; hereinafter Iida) relied upon by the Examiner as teaching employing an illuminator that includes a beam restricting plate having an opening through which the beam from a light source passes, and employing an illuminator that includes a collimator lens for converging the beam having passed through the opening, the opening being located in vicinity of a focusing position of the collimator lens and having a rectangular shape.

However, as claims 7 and 8 depend from claim 1, and claims 13 and 14 depend from claim 10, claims 7, 8, 13 and 14 are patentable over Steenhoek also, even when considered in view of Iida.

IV.   Claims 22, 23, 26 and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakazono, as applied to claims 16 and 25, in view of Iida, relied upon by the Examiner for the same purposes, noted above, as to claims 7, 8, 13 and 14.

However, as claims 22 and 23 depend from claim 16, and claims 26 and 27 depend from claim 25, claims 22, 23, 26 and 27 are patentable over Nakazono also, even when considered in view of Iida.
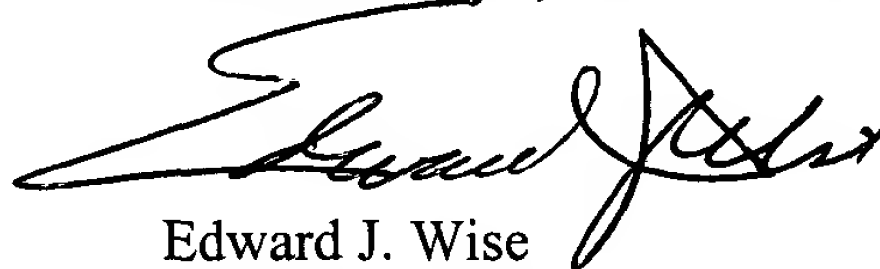
CONCLUSION

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Accordingly, it is urged that the application, as now amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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